

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 06-217174
(43)Date of publication of application : 05.08.1994

(51) Int.CI. H04N 5/225

(21)Application number : 05-288051
(22)Date of filing : 17.11.1993

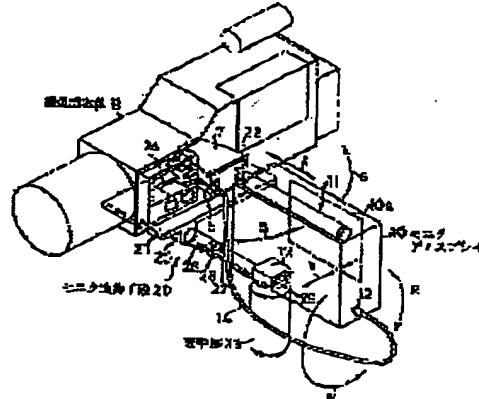
(71)Applicant : CASIO COMPUT CO LTD
(72)Inventor : HOSAKA AKIHIKO
MOTOJO YOSHIAKI

(54) IMAGE PICKUP DEVICE

(57) Abstract-

PURPOSE: To adjust the attitude of a monitor display while an image pickup device is stably held by providing a handle at a monitor display part connected with the image pickup device main body, and to provide a handle.

image pickup device main body so as to be rotatable. CONSTITUTION: An image pickup device main body B is connected with a monitor display 10 so as to be rotatable by a monitor supporting means 20. Then, a handle part 33 is provided at the display 10 side. The display 10 can be supported by the handle part 33 in a hand different from the hand holding the main body B, and rotated to an arbitrary direction against the main body 10. Therefore, even at the time of image pickup by setting the main body B at any position, a screen 10a of the display 10 can be faced to a direction which is easy to see.



LEGAL STATUS

[Date of request for examination] 17.11.1992

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 020151-

[Date of registration] 27/01/2015

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision]

[Decision of Rejection]
[Date of rejection: 2011]

【特許請求の範囲】

【請求項1】モニタディスプレイを備えた撮像機であつて、

被写体を撮像する撮像機本体とモニタディスプレイとを互いに回動可能に連結し、かつ前記モニタディスプレイ側に、前記撮像機本体を持つ手とは別の手で前記モニタディスプレイ側を支えさせるとともに前記モニタディスプレイを前記撮像機本体に対して任意の向きに回動させるための取手部を設けたことを特徴とする撮像機。

【発明の詳細な説明】

【0001】

【産業上の利用分野】この発明は、モニタディスプレイを備えた撮像機に関するものである。

【0002】

【従来の技術】一般に、ビデオカメラ等の撮像機には、ビューファインダと呼ばれる被写体確認部が設けられているが、このビューファインダは、通常、小画面の小型表示素子の表示を接眼レンズを介して覗き見るように構成されているため、表示が見づらいという難点をもつていて。

【0003】一方、最近では、モニタディスプレイを備え、このモニタディスプレイの画面を見ながら撮像できるようにした撮像機が提案されている。図4はモニタディスプレイを備えた撮像機として従来考えられているものの一例を示す斜視図である。

【0004】この撮像機は、撮像機本体(A)にモニタディスプレイ1を着脱可能に装着したもので、モニタディスプレイ1は、その下側面に設けたシュー係合部材2を撮像機本体Aの上面に設けられているモニタ接着シュー3に係合することにより、画面1aを撮像機本体Aの後方(ビューファインダaを見る方向)に向けた状態で撮像機本体Aに装着されている。

【0005】そして、この撮像機では、撮像機本体Aの画像信号出力端子4とモニタディスプレイ1の画像信号入力端子5とをケーブル6により接続し、撮像機本体Aの撮像画像をモニタディスプレイ1に表示させている。

【0006】なお、図4に示した撮像機は、撮像機本体Aの上部にモニタディスプレイ1を装着したものであるが、この種の撮像機としては、撮像機本体の後部あるいは側部に、モニタディスプレイをその画面を撮像機本体の後方に向けた状態で装着したものも考えられている。

【0007】また、モニタディスプレイを備えた撮像機としては、従来、モニタディスプレイの一側縁部を撮像機本体の側面に回転軸により軸支し、前記モニタディスプレイを撮像機本体に対して任意の角度に回動可能に設けた構成のものも提案されている(実開昭61-103968号公報参照)。

【0008】

【発明が解決しようとする課題】しかしながら、上記図

4に示した撮像機のような、モニタディスプレイをその画面を撮像機本体の後方に向けた状態で装着したものは、撮像機本体に対するモニタディスプレイの姿勢が常に一定であるため、被写体に対する撮像機の構え方(撮像機の持ち方)によっては、モニタディスプレイの画面を斜め方向から見なければならないことがあり、したがって、撮像機の向きによってモニタディスプレイの表示が見づらくなってしまうという問題をもっていた。

【0009】なお、ハンディタイプの撮像機のモニタデ

10 イスプレイとしては、その重量を軽くするために、液晶パネルを用いて画像を表示する液晶ディスプレイを使用するのが望ましいが、現在広く利用されているTN(ツイステッド・ネマティック)型の液晶パネルは周知のようにその視野角が狭いため、モニタディスプレイが液晶ディスプレイである場合は、斜め方向からではディスプレイの表示がほとんど見えなくなってしまう。

【0010】一方、モニタディスプレイを撮像機本体に対して任意の角度に回動可能に設けている撮像機は、撮像機本体に対するモニタディスプレイの姿勢を任意に調整できるため、撮像機の構え方に応じてモニタディスプレイの姿勢を調整しておけば、モニタディスプレイの画面を、そのほぼ正面側から見やすい状態で見ることができる。

【0011】しかし、この撮像機は、撮像中にモニタディスプレイの姿勢を変えようすると、一般に“手ブレ”と呼ばれる撮像機の振れ動きにより、撮像された画像にブレが生じるという問題をもっている。

【0012】すなわち、上記撮像機は、撮像機本体を片手で持つても撮像操作できるが、ブレのない良好な撮像を行なうには、もう一方の手でも撮像機本体を支え、両手で撮像機を安定に保持して撮像するのが好ましい。

【0013】しかしながら、この撮像機は、両手で撮像機を保持している状態ではモニタディスプレイの姿勢を変えることはできないため、撮像中にモニタディスプレイの姿勢を変えるには、一方の手を撮像機本体から放してモニタディスプレイを回動させなければならず、したがって、モニタディスプレイの姿勢を調整している間は撮像機本体が片手持ち状態となって“手ブレ”を起こしてしまう。

【0014】この発明は上記のような実情にかんがみてなされたものであって、その目的とするところは、両手で安定に保持してブレのない良好な撮像を行なうことができ、しかも、両手で保持したままモニタディスプレイの姿勢を調整して、その画面を見やすい方向に向けることができる撮像機を提供することにある。

【0015】

【課題を解決するための手段】この発明の撮像機は、被写体を撮像する撮像機本体とモニタディスプレイとを互いに回動可能に連結し、かつ前記モニタディスプレイ側に、前記撮像機本体を持つ手とは別の手で前記モニタ

イスプレイ側を支えさせるとともに前記モニタディスプレイを前記撮像機本体に対して任意の向きに回動させるための取手部を設けたことを特徴とするものである。

【0016】

【作用】すなわち、この発明の撮像機は、片手で撮像機本体を持ち、もう一方の手でモニタディスプレイ側の取手部を持って保持できるものであり、前記撮像機本体とモニタディスプレイとは回動可能に連結されているため、片手で撮像機本体を持ち、もう一方の手で前記取手部を持てば、撮像機を両手で安定に保持してブレのない良好な撮像を行なうことができるし、また、モニタディスプレイの姿勢調整も前記取手部を利用して簡単に行なえるから、撮像機を両手で保持したままモニタディスプレイの姿勢を調整して、その画面を見やすい方向に向けることができる。

【0017】

【実施例】以下、この発明の一実施例を図1～図3を参照して説明する。図1は撮像機の撮像状態における斜視図、図2はモニタディスプレイを撮像機本体に沿わせてたたみ込んだ状態の斜視図、図3は撮像機の分解斜視図である。

【0018】この実施例の撮像機は、被写体を撮像する撮像機本体(図ではハンディタイプのビデオカメラ)Bと、液晶表示式のモニタディスプレイ10と、前記撮像機本体Bとモニタディスプレイ10とを互いに回動可能に連結するためのモニタ支持手段20とで構成されており、さらにモニタディスプレイ10側には、取手部33が設けられている。

【0019】上記モニタディスプレイ10は、その内部構造は図示しないが、機器ケース内に、TN型のドットマトリックス液晶表示パネルおよびそのバックライトと、チューナ、受像機回路、スピーカ、表示駆動回路、電源電池等を収納したものであり、前記機器ケースの上部には伸縮可能なロッドアンテナ11が設けられ、またケース側面には画像信号入力端子12が設けられている。なお、10aはモニタディスプレイ10の画面である。

【0020】すなわち、上記モニタディスプレイ10は、小型液晶テレビジョン受像機としての機能を備えたもので、このモニタディスプレイ10は、それ自体を単体でテレビジョン受像機としても使用できるように、モニタ支持手段20によって撮像機本体Bに着脱可能に連結されている。

【0021】上記モニタ支持手段20について説明すると、図1～図3において、21は撮像機本体Bの下面に着脱可能に取付けられるベース板であり、このベース板21は、その上面に設けたシュー係合駒22を撮像機本体Bの下面に設けたシュー7に挿入係合することによって撮像機本体Bに取付けられている。

【0022】前記シュー7は、その幅が上記シュー係合駒22の挿入口側から反対側に向かって狭くなる形状のものとされており、このシュー7は、シュー係合駒挿入口を撮像機本体Bの一侧面側に向けた状態で、シュー固定ねじ8により撮像機本体Bの下面にねじ止め固定されている。

駒22の挿入口側から反対側に向かって狭くなる形状のものとされており、このシュー7は、シュー係合駒挿入口を撮像機本体Bの一侧面側に向けた状態で、シュー固定ねじ8により撮像機本体Bの下面にねじ止め固定されている。

【0023】また、上記シュー係合駒22は、その上部に前記シュー7に密に嵌入する先細り状のシュー係合部22aを形成したもので、このシュー係合部22aの基端部には、前記シュー7に設けたロック孔9に嵌入する

10 ボール23が突出可能に設けられている。

【0024】なお、このボール23は、シュー係合駒22内に設けた図示しないスプリングによってシュー係合部22aの上面に突出する状態に押圧されており、シュー係合部22aをシュー7に挿脱する際にシュー7の下面で押されて没入するようになっている。

【0025】また、シュー係合駒22は、その下面に設けた足部22bを、ベース板21にその前後方向に沿わせて設けたガイド開口24に摺動可能に係合させることにより、ベース板21に対してその前後方向に移動可能

20 に取付けられており、このシュー係合駒22とベース板21とは、相互の摩擦力によって、ある程度以上の移動力を加えない限りみだりに移動しないように固定されている。

【0026】上記ベース板21の下面には、その幅方向に沿わせて筒状の軸受部25が形成されており、この軸受部25には、丸棒からなる軸部材26がその周方向に回転可能に、かつ軸方向(ベース板幅方向)にも移動可能に挿通されている。この軸部材26は、その外周面と軸受部25の内周面とを適度な摩擦力で接続させることにより、ある程度以上の力を加えない限りみだりに回転したり軸方向移動したりしないように軸受部25に支持されている。なお、26aは軸部材26の後端に設けられた抜け止め用ストップである。

【0027】また、上記軸部材26の先端にはモニタ支持アーム27が連結されている。このモニタ支持アーム27は、軸部材26の先端に設けた溝部に嵌入させたアーム基部を、軸部材26の軸線に対して直交する支軸28を介して軸部材26に軸交することにより、軸部材26の周方向に対して直交する方向に回動可能に設けられている。このモニタ支持アーム27は、その基部を軸部材26の溝部内面に適度な摩擦力で接続させることにより、ある程度以上の力を加えない限りみだりに回動しないように軸部材26に支持されている。

【0028】そして、上記モニタ支持アーム27の先端部にはモニタ取付け部28が設けられている。このモニタ取付け部29は、モニタ支持アーム27の先端部上面に突起固定したねじ軸30と、このねじ軸30に螺合されたモニタ固定用回転つまみ31と、ねじ軸30の上端に固定されたシュー係合板32とからなっている。

【0029】このモニタ取付け部29は、そのシュー係合板32

合板32を上記モニタディスプレイ10の下面にねじ止め等の手段によって取付けたシュー13に挿入係合させるとともに、モニタ固定用回転つまみ31を回してこの回転つまみ31で前記シュー13をその下面側から締付け固定することによりモニタディスプレイ10を着脱可能に固定するもので、このモニタ取付け部29に取付けられたモニタディスプレイ10は、モニタ支持アーム27と一体化される。

【0030】すなわち、上記モニタ支持手段20は、そのベース部材21を、その上面のシュー係合駒22を撮像機本体Bの下面のシュー7に係合させることによって撮像機本体Bの下面に取付けるとともに、モニタ支持アーム27に設けたモニタ取付け部29に、モニタディスプレイ10を取付けることによって、モニタディスプレイ10を第2図に示すように撮像機本体Bに連結するものであり、このモニタ支持手段20によって撮像機本体Bに装着されたモニタディスプレイ10は、その画像信号入力端子12を撮像機本体B側の画像信号出力端子5とケーブル14で接続して使用される。

【0031】一方、撮像機のモニタディスプレイ10側に設けられる取手部33は、上記モニタ支持アーム27の先端部に、モニタ取付け部29と反対側に突出させて設けられている。

【0032】この取手部33は、撮像機本体Bを持つ手とは別の手でモニタディスプレイ10側を支えさせるとともに前記モニタディスプレイ10を撮像機本体Bに対して任意の向きに回動させるためのものである。

【0033】上述したように、この実施例の撮像機は、撮像機本体Bとモニタディスプレイ10とをモニタ支持手段20によって互いに回動可能に連結し、かつモニタディスプレイ10側に、撮像機本体Bを持つ手とは別の手で持たれる取手部33を設けたものである。

【0034】この撮像機においては、上記モニタ支持手段20を、そのモニタ支持アーム27を、ベース部材21の軸受部25に支持させた回転可能な軸部材26にその軸線に対して直交する支軸28を介して軸支した構造としているため、このモニタ支持アーム27を前記軸部材26と一緒にその周方向に回転させるとともに前記支軸28を中心として軸部材26の周方向と直交する方向にも回動させることができるから、このモニタ支持アーム27のモニタ取付け部29に取付けたモニタディスプレイ10を、前記軸部材26の周方向Rと、これと直交する方向S(モニタ支持アーム27の回動方向)との二方向に回動させることができる。

【0035】したがって、上記撮像機によれば、撮像機本体Bに対するモニタディスプレイ10の姿勢を任意の向きに調整することができるから、撮像機本体Bをどのような位置に構えて撮像する場合でもモニタディスプレイ10の画面10aを見やすい方向に向けることができる。

【0036】なお、上記モニタ支持手段20の軸部材26はその軸受部25にその摺接面の摩擦力により固定され、モニタ支持アーム27は軸部材26にその摺接面の摩擦力により固定されるから、姿勢調整されたモニタディスプレイ10の姿勢が振動等により姿勢が変化することはない。

【0037】しかも、上記実施例の撮像機では、モニタ支持手段20を、モニタ支持アーム27を軸支した軸部材26をその軸方向にも移動可能にベース板21の軸受部25に支持させた構成としているため、モニタディスプレイ10の位置を、前記軸部材26の軸方向、つまり撮像機本体Bの幅方向Xにも移動調整することができるし、また、撮像機本体Bに取付けられるシュー係合駒22をベース板21に移動可能に設けているために、ベース板21をその前後方向、つまり撮像機本体Bの前後方向に移動させることができるから、モニタディスプレイ10の位置を、撮像機本体Bの前後方向Yにも移動調整することができる。

【0038】そして、上記撮像機においては、そのモニタディスプレイ10側に、撮像機本体Bを持つ手とは別の手で持たれる取手部33を設けているため、この撮像機を両手で安定に保持することができる。

【0039】すなわち、上記撮像機は、片手で撮像機本体Bを持ち、もう一方の手でモニタディスプレイ10側の取手部33を持って保持できるものであり、撮像機本体Bとモニタディスプレイ10とは上記モニタ支持手段20を介して互いに回動可能に連結されているため、片手で撮像機本体Bを持ち、もう一方の手で前記取手部33を持てば、撮像機を両手で安定に保持してプレーのない良好な撮像を行なうことができる。

【0040】しかも、上記撮像機では、モニタディスプレイ10の姿勢調整も上記取手部33を利用して簡単に行なえるから、撮像機を両手で保持したままモニタディスプレイ10の姿勢を調整して、その画面を見やすい方向に向けることができる。

【0041】また、上記撮像機は、モニタディスプレイ10を図2に示したように撮像機本体Bの側面に沿わせてたたみ込むことができるため、撮像機をモニタディスプレイ10を装着したままの状態で携帯したりキャリングケース等に収納したりする際に、撮像機全体をコンパクトにすることができます。

【0042】なお、上記実施例では、モニタ支持手段20を撮像機本体Bの下面に取付けているが、このモニタ支持手段20は、撮像機本体Bの上面または側面に取付けられるものでもよく、またモニタ支持手段20に対するモニタディスプレイ10の取付け構造も、上記実施例に限らず、例えばねじ込み式等としてもよい。

【0043】さらに、上記モニタ支持手段20の軸部材26は、軸方向には移動できないものでもよいし、またベース板21も、撮像機本体Bに対して移動できない状

態に取付けられるものでもよい。

【0044】また、上記実施例では、撮像機本体Bとモニタディスプレイ10とを、上記したモニタ支持手段20によって連結しているが、前記撮像機本体Bとモニタディスプレイ10との連結構造は上記実施例に限られるものではなく、要は、撮像機本体Bとモニタディスプレイ10とが少なくとも一方向に回動可能に連結されればよい。

【0045】さらに上記実施例では、モニタディスプレイ10として、小型テレビジョン受像機としての機能を備えた液晶ディスプレイを用いているが、このモニタディスプレイは、ブラウン管を備えた小型テレビジョンディスプレイや、テレビジョン受像機としての機能を有さない専用モニタディスプレイであってもよい。

【0046】

【発明の効果】この発明の撮像機は、被写体を撮像する撮像機本体とモニタディスプレイとを互いに回動可能に連結し、かつ前記モニタディスプレイ側に、前記撮像機本体を持つ手とは別の手で前記モニタディスプレイ側を支えさせるとともに前記モニタディスプレイを前記撮像

20

機本体に対して任意の向きに回動させるための取手部を設けたものであるから、両手で安定に保持してプレのない良好な撮像を行なうことができ、しかも、両手で保持したままモニタディスプレイの姿勢を調整して、その画面を見やすい方向に向けることができる。

【図面の簡単な説明】

【図1】本発明の一実施例による撮像機の撮像状態における斜視図。

【図2】向撮像機のモニタディスプレイを撮像機本体に沿わせてたたみ込んだ状態の斜視図。

【図3】同撮像機の分解斜視図。

【図4】従来提案されているモニタディスプレイを備えた撮像機の斜視図。

【符号の説明】

B…撮像機本体

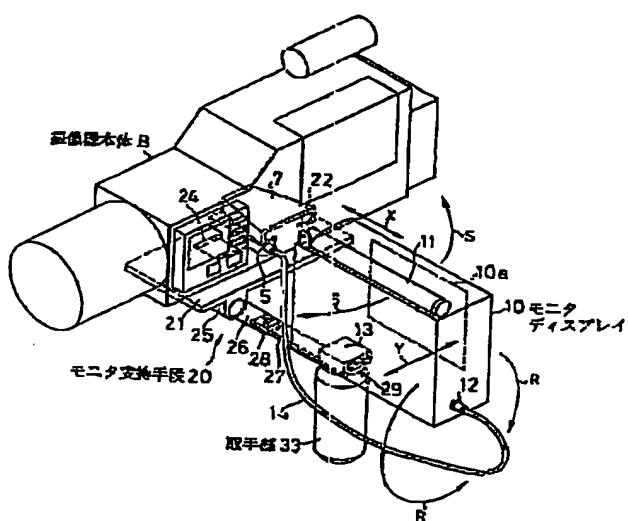
10…モニタディスプレイ

10a…画面

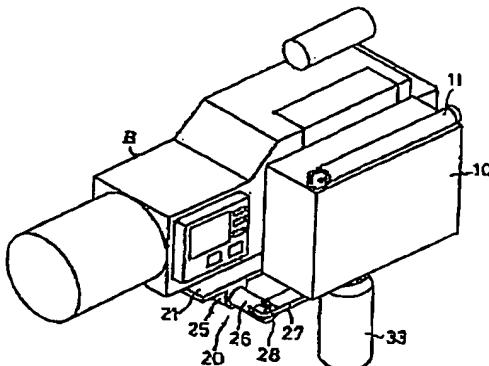
20…モニタ支持手段

33…取手部

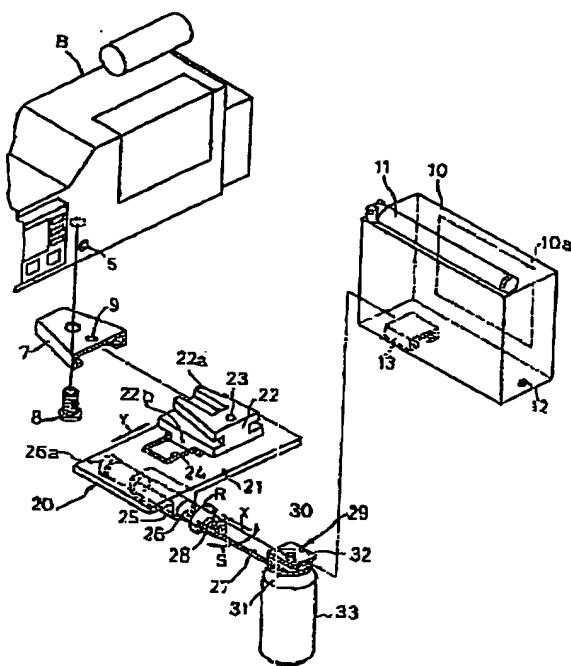
【図1】



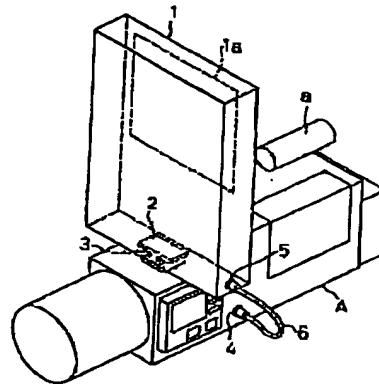
【図2】



【図3】



【図4】



* NOTICES *

JPO and NCIPPI are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The hand which connects mutually the body of an image pick-up machine and the monitor display equipped with the monitor display which is an image pick-up machine and picturizes a photographic subject rotatable, and has said body of an image pick-up machine in said monitor display side is the image pick-up machine characterized by to prepare the Toride section for making the sense of arbitration rotate said monitor display to said body of an image pick-up machine while making said monitor display side supported by another hand.

[Translation done.]

* NOTICES *

JPO and NCIP are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. *** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the image pick-up machine equipped with the monitor display.

[0002]

[Description of the Prior Art] Generally, although the photographic subject check section called a viewfinder is prepared, since this viewfinder is constituted so that it may try to look into the display of the small display device of a small screen through an ocular, it usually has the difficulty of being hard to see a display in image pick-up machines, such as a video camera.

[0003] On the other hand, recently, it has a monitor display and the image pick-up machine it enabled it to picturize, looking at this monitor scope is proposed. Although drawing 4 is conventionally considered as an image pick-up machine equipped with the monitor display, it is the perspective view showing an example.

[0004] This image pick-up machine is what equipped the body A of an image pick-up machine (drawing handicap type video camera) with the monitor display 1 removable. The monitor display 1 By making the shoe engagement member 2 prepared in the bottom side engage with the monitor wearing shoe 3 in which it is prepared on the top face of the body A of an image pick-up machine, where screen 1a is turned behind the body A of an image pick-up machine (direction which looks at Viewfinder a), the body A of an image pick-up machine is equipped.

[0005] And in this image pick-up machine, the picture signal output terminal 4 of the body A of an image pick-up machine and the picture signal input terminal 5 of the monitor display 1 are connected with a cable 6, and the image pick-up image of the body A of an image pick-up machine is displayed on the monitor display 1.

[0006] In addition, although the image pick-up machine shown in drawing 4 equips the upper part of the body A of an image pick-up machine with the monitor display 1, that with which it equipped as this kind of an image pick-up machine where it turned the monitor display to the posterior part or flank of the body of an image pick-up machine and that screen is turned behind the body of an image pick-up machine is also considered.

[0007] Moreover, as an image pick-up machine equipped with the monitor display, the 1 side edge section of a monitor display is supported to revolve with a revolving shaft on the side face of the body of an image pick-up machine, and the thing of a configuration of having prepared said monitor display in the include angle of arbitration rotatable to the body of an image pick-up machine is also proposed conventionally (refer to JP,61-103968,U).

[0008]

[Problem(s) to be Solved by the Invention] However, the thing which equipped with a monitor display like the image pick-up machine shown in above-mentioned drawing 4 where the screen is turned behind the body of an image pick-up machine Since the posture of a monitor display over the body of an image pick-up machine is always fixed, depending on how (how to have an image pick-up machine) to establish the image pick-up machine to a photographic subject A monitor scope may have to be seen from across, therefore it had the problem of being hard coming to see the display of a monitor display with the sense of an image pick-up machine.

[0009] In addition, as a monitor display of a handicap type image pick-up machine, in order to make the weight light, it is desirable to use the liquid crystal display which uses a liquid crystal panel and displays an image, but as everyone knows, since the angle of visibility is narrow, when a monitor display is a liquid crystal display, as for the liquid crystal panel of TN (Twisted Nematic) mold used widely now, the display of a display will almost

disappear from across.

[0010] On the other hand, since the image pick-up machine which has prepared the monitor display in the include angle of arbitration rotatable to the body of an image pick-up machine can adjust the posture of a monitor display over the body of an image pick-up machine to arbitration, if the posture of a monitor display is adjusted according to how to establish an image pick-up machine, it can see a monitor scope in the legible condition from a transverse-plane side mostly.

[0011] However, this image pick-up machine has the problem that Bure arises in the picturized image by deflection motion of the image pick-up machine generally called "blurring", if it is going to change the posture of a monitor display during an image pick-up.

[0012] That is, in order to perform the good image pick-up without Bure, it is desirable [even if the above-mentioned image pick-up machine has a body of an image pick-up machine single hand, it can carry out image pick-up actuation, but] to support the body of an image pick-up machine, and to hold and picturize an image pick-up machine to stability with both hands also by another hand.

[0013] However, in the condition of holding the image pick-up machine with both hands, since the posture of a monitor display is unchangeable, in order to change the posture of a monitor display during an image pick-up, the body of an image pick-up machine will be in a piece stock condition, and this image pick-up machine will start "blurring", while having to release one of one's hold of the body of an image pick-up machine, and having to rotate a monitor display, therefore adjusting the posture of a monitor display.

[0014] The place which this invention is made in view of the above actual condition, and is made into that purpose is to be able to perform the good image pick-up which holds to stability with both hands and does not have Bure, to adjust the posture of a monitor display moreover, holding with both hands, and offer the image pick-up machine which can turn that screen in the legible direction.

[0015]

[Means for Solving the Problem] The image pick-up machine of this invention is characterized by to prepare the Toride section for making the sense of arbitration rotate said monitor display to said body of an image pick-up machine while it makes said monitor display side supported by hand that the hand which connects mutually the body of an image pick-up machine and monitor display which picturize a photographic subject rotatable, and has said body of an image pick-up machine in said monitor display side is another.

[0016]

[Function] Namely, since the image pick-up machine of this invention has a body of an image pick-up machine single hand, it can hold with the Toride section by the side of a monitor display by another hand and said body of an image pick-up machine and monitor display are connected rotatable, If it has a body of an image pick-up machine single hand and has said Toride section by another hand, can perform the good image pick-up which holds an image pick-up machine to stability with both hands, and does not have Bure, and Moreover, since posture adjustment of a monitor display can also be easily performed using said Toride section, the posture of a monitor display can be adjusted holding an image pick-up machine with both hands, and the screen can be turned in the legible direction.

[0017]

[Example] Hereafter, one example of this invention is explained with reference to drawing 1 - drawing 3 . The perspective view in the condition of the perspective view in the image pick-up condition of an image pick-up machine and drawing 2 having made the monitor display meeting the body of an image pick-up machine, and having collapsed drawing 1 , and drawing 3 are the decomposition perspective views of an image pick-up machine.

[0018] The image pick-up machine of this example consists of monitor support means 20 for connecting mutually the body B of an image pick-up machine (drawing handicap type video camera) and the liquid crystal display-type monitor display 10 which picturize a photographic subject, and said body B of an image pick-up machine and monitor display 10 rotatable, and the Toride section 33 is further formed in the monitor display 10 side.

[0019] Although the above-mentioned monitor display 10 does not illustrate the internal structure, in the device case, the dot-matrix liquid crystal display panel of TN mold and its back light, a tuner, a receiving set circuit, a loudspeaker, a display drive circuit, a power-source cell, etc. are contained, and the rod antenna 11 which can be expanded and contracted is formed in the upper part of said device case, and the picture signal input terminal 12 is formed in the case side face. In addition, 10a is the screen of the monitor display 10.

[0020] That is, the above-mentioned monitor display 10 is the thing equipped with the function as a small liquid crystal television receiver, and this monitor display 10 is connected with the body B of an image pick-up machine by the monitor support means 20 removable so that itself can be alone used also as a television receiver.

[0021] If the above-mentioned monitor support means 20 is explained, in drawing 1 - drawing 3, 21 is a base plate attached in the inferior surface of tongue of the body B of an image pick-up machine removable, and this base plate 21 is attached in the shoe 7 which formed the shoe engagement piece 22 prepared in that top face in the inferior surface of tongue of the body B of an image pick-up machine by carrying out insertion engagement at the body B of an image pick-up machine.

[0022] That width of face is made into the thing of the configuration which becomes narrow toward the opposite side from the insertion opening side of the above-mentioned shoe engagement piece 22, this shoe 7 is in the condition which turned shoe engagement piece insertion opening to the 1 side-face side of the body B of an image pick-up machine, said shoe 7 is ****ed by the shoe lockscrew 8 on the inferior surface of tongue of the body B of an image pick-up machine, and stop immobilization is carried out.

[0023] Moreover, the above-mentioned shoe engagement piece 22 is the thing in which tapered form shoe engagement section 22a densely inserted in said shoe 7 was formed in that upper part, and the ball 23 inserted in the lock hole 9 prepared in said shoe 7 is formed in the end face section of this shoe engagement section 22a possible [frequent appearance].

[0024] In addition, this ball 23 is pressed with the spring which was prepared in the shoe engagement piece 22 and which is not illustrated by the condition of projecting on the top face of shoe engagement section 22a, in case it inserts [a / shoe engagement section 22] to a shoe 7, is pushed on the inferior surface of tongue of a shoe 7, and is absorbed.

[0025] moreover, the foot which formed the shoe engagement piece 22 in that inferior surface of tongue -- by making it engage with the guide opening opening 24 which the base plate 21 was made to meet that cross direction, and prepared 22b possible [sliding], it is attached in that cross direction movable to the base plate 21, and unless the above migration force is applied to some extent according to mutual frictional force, this shoe engagement piece 22 and the base plate 21 are being fixed so that it may not move indiscriminately.

[0026] The inferior surface of tongue of the above-mentioned base plate 21 is made to meet crosswise [that], the tubed bearing 25 is formed in it, and the shank material 26 which becomes this bearing 25 from the round bar is inserted in that hoop direction movable pivotable also at shaft orientations (the direction of the base board width). By making that peripheral face and inner skin of bearing 25 **** by moderate frictional force, unless the above force is applied to some extent, this shank material 26 is supported by bearing 25 so that it may not rotate indiscriminately or shaft-orientations migration may not be carried out. In addition, 26a is the stopper for omission stops formed in the back end of the shank material 26.

[0027] Moreover, the monitor support arm 27 is connected at the tip of the above-mentioned shank material 26. This monitor support arm 27 is formed in the direction which intersects perpendicularly to the hoop direction of the shank material 26 rotatable by supporting to revolve the arm base made to insert in the slot prepared at the tip of the shank material 26 to the shank material 26 through the pivot 28 which intersects perpendicularly to the axis of the shank material 26. By making that base **** to the slot inside of the shank material 26 by moderate frictional force, unless the above force is applied to some extent, this monitor support arm 27 is supported by the shank material 26 so that it may not rotate indiscriminately.

[0028] And the monitor anchoring section 28 is formed in the point of the above-mentioned monitor support arm 27. This monitor anchoring section 29 consists of a shoe engagement plate 32 fixed to the point top face of the monitor support arm 27 by the rotary knob 31 for monitor immobilization which carried out protrusion immobilization, and which ****ed and was screwed in a shaft 30 and this screw-thread shaft 30, and the upper limit of the **** shaft 30.

[0029] While this monitor anchoring section 29 makes the shoe 13 which ****ed that shoe engagement plate 32 on the inferior surface of tongue of the above-mentioned monitor display 10, and attached it with the means of a stop etc. carry out insertion engagement It is what fixes the monitor display 10 removable by turning the rotary knob 31 for monitor immobilization, binding said shoe 13 tight from that inferior-surface-of-tongue side, and fixing by this rotary knob 31. The monitor display 10 attached in this monitor anchoring section 29 is united with the monitor support arm 27.

[0030] Namely, while the above-mentioned monitor support means 20 attaches the base member 21 in the

inferior surface of tongue of the body B of an image pick-up machine by making the shoe engagement piece 22 of the top face engage with the shoe 7 of the inferior surface of tongue of the body B of an image pick-up machine. By attaching the monitor display 10 in the monitor anchoring section 29 prepared in the monitor support arm 27 The monitor display 10 with which connects the monitor display 10 with the body B of an image pick-up machine as shown in Fig. 2, and the body B of an image pick-up machine was equipped by this monitor support means 20 The picture signal input terminal 12 is used connecting by the picture signal output terminal 5 and cable 14 by the side of the body B of an image pick-up machine.

[0031] On the other hand, the Toride section 33 prepared in the monitor display 10 side of an image pick-up machine makes the monitor anchoring section 29 and the opposite side project to the point of the above-mentioned monitor support arm 27, and is prepared in it.

[0032] The hand that this Toride section 33 has the body B of an image pick-up machine is for making the sense of arbitration rotate said monitor display 10 to the body B of an image pick-up machine while making the monitor display 10 side supported by another hand.

[0033] As mentioned above, the image pick-up machine of this example forms the Toride section 33 held by hand that the hand which connects mutually the body B of an image pick-up machine and the monitor display 10 rotatable by the monitor support means 20, and has the body B of an image pick-up machine in the monitor display 10 side is another.

[0034] In this image pick-up machine the above-mentioned monitor support means 20 that monitor support arm 27 Since it is considering as the structure supported to revolve through the pivot 28 which intersects perpendicularly with the pivotable shank material 26 which the bearing 25 of the base member 21 was made to support to the axis, Since it can be made to rotate also in the direction which intersects perpendicularly with the hoop direction of the shank material 26 focusing on said pivot 28 while making that hoop direction rotate this monitor support arm 27 together with said shank material 26 The monitor display 10 attached in the monitor anchoring section 29 of this monitor support arm 27 can be rotated in the two directions of the direction S (the rotation direction of the monitor support arm 27) which intersects perpendicularly with the hoop direction R of said shank material 26, and this.

[0035] Therefore, according to the above-mentioned image pick-up machine, since the posture of the monitor display 10 over the body B of an image pick-up machine can be adjusted to the sense of arbitration, even when establishing the body B of an image pick-up machine in what kind of location and picturizing it, screen 10a of the monitor display 10 can be turned in the legible direction.

[0036] In addition, the shank material 26 of the above-mentioned monitor support means 20 is fixed to the bearing 25 by the frictional force of the slide contact side, and since the monitor support arm 27 is fixed to the shank material 26 by the frictional force of the slide contact side, a posture does not change [the posture of the monitor display 10 by which posture adjustment was carried out] with vibration etc.

[0037] And since the shank material 26 which supported the monitor support arm 27 to revolve with the image pick-up machine of the above-mentioned example for the monitor support means 20 is considered as the configuration which made the bearing 25 of the base plate 21 support movable also to the shaft orientations, Can carry out migration adjustment at the shaft orientations X of said shank material 26, i.e., the cross direction of the body B of an image pick-up machine, and the location of the monitor display 10 Moreover, since the shoe engagement piece 22 attached in the body B of an image pick-up machine is formed in the base plate 21 movable Since the base plate 21 can be moved to the cross direction, i.e., the cross direction of the body B of an image pick-up machine, migration adjustment of the location of the monitor display 10 can be carried out at the cross direction Y of the body B of an image pick-up machine.

[0038] And in the above-mentioned image pick-up machine, since the Toride section 33 held by the hand other than the hand which has the body B of an image pick-up machine in that monitor display 10 side is formed, this image pick-up machine can be held to stability with both hands.

[0039] Namely, it is what the above-mentioned image pick-up machine has the body B of an image pick-up machine single hand, and can be held with the Toride section 33 by the side of the monitor display 10 by another hand. Since the body B of an image pick-up machine and the monitor display 10 are mutually connected rotatable through the monitor support means 20 mentioned above, If it has the body B of an image pick-up machine single hand and has said Toride section 33 by another hand, the good image pick-up which holds an image pick-up machine to stability with both hands, and does not have Bure can be performed.

[0040] And in the above-mentioned image pick-up machine, since posture adjustment of the monitor display 10

can also be easily performed using the above-mentioned Toride section 33, the posture of the monitor display 10 can be adjusted holding an image pick-up machine with both hands, and the screen can be turned in the legible direction.

[0041] Moreover, since the monitor display 10 is made for there to be along the side face of the body B of an image pick-up machine and the above-mentioned image pick-up machine can collapse it, as shown in drawing 2, in case it carries an image pick-up machine in the condition [having equipped with the monitor display 10] or contains it to a carrying case etc., it can use the whole image pick-up machine as a compact.

[0042] In addition, although the monitor support means 20 is attached in the inferior surface of tongue of the body B of an image pick-up machine in the above-mentioned example, this monitor support means 20 may be attached in the top face or side face of the body B of an image pick-up machine, and is good also not only as the above-mentioned example but a screwed type etc. [of the attaching structure of the monitor display 10 in as opposed to the monitor support means 20]

[0043] Furthermore, what cannot move to shaft orientations is sufficient as the shank material 26 of the above-mentioned monitor support means 20, and it may be attached in the condition that the base plate 21 is also unmovable to the body B of an image pick-up machine.

[0044] Moreover, although the body B of an image pick-up machine and the monitor display 10 are connected by the monitor support means 20 mentioned above in the above-mentioned example, the connection structure of said body B of an image pick-up machine and monitor display 10 is not restricted to the above-mentioned example, and, in short, the body B of an image pick-up machine and the monitor display 10 should just be connected with the one direction rotatable at least.

[0045] Although the liquid crystal display equipped with the function as a small television receiver is furthermore used as a monitor display 10 in the above-mentioned example, this monitor display may be the small television display equipped with the Braun tube, and an exclusive monitor display which does not have a function as a television receiver.

[0046]

[Effect of the Invention] The image pick-up machine of this invention connects mutually the body of an image pick-up machine and monitor display which picturize a photographic subject rotatable. And since the Toride section for making the sense of arbitration rotate said monitor display to said body of an image pick-up machine is prepared while making said monitor display side supported by the hand other than the hand which has said body of an image pick-up machine in said monitor display side The good image pick-up which holds to stability with both hands and does not have Bure can be performed, moreover the posture of a monitor display can be adjusted, holding with both hands, and the screen can be turned in the legible direction.

[Translation done.]

* NOTICES *

JPO and NCIP are not responsible for any
damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The perspective view in the image pick-up condition of the image pick-up machine by one example of this invention.

[Drawing 2] The perspective view in the condition of having made the body of an image pick-up machine meeting, and having collapsed the monitor display of this image pick-up machine.

[Drawing 3] The decomposition perspective view of this image pick-up machine.

[Drawing 4] The perspective view of the image pick-up machine equipped with the monitor display by which the conventional proposal is made.

[Description of Notations]

B -- Body of an image pick-up machine

10 -- Monitor display

10a -- Screen

20 -- Monitor support means

33 -- Toride section

[Translation done.]

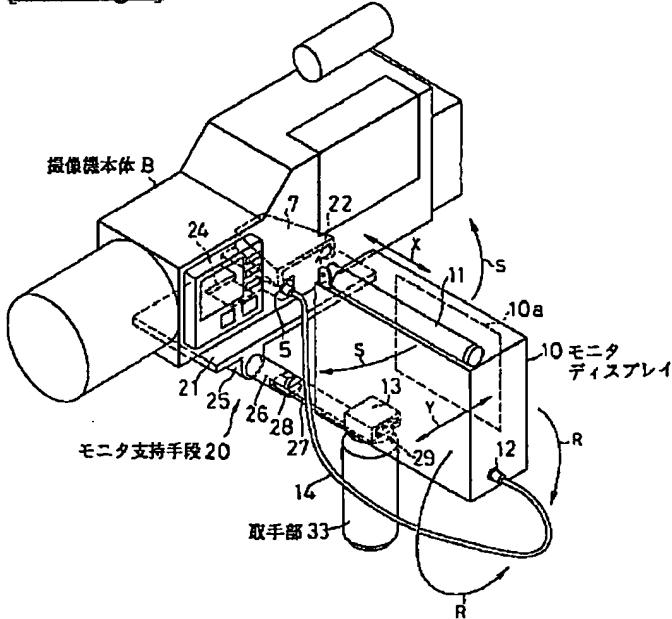
* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

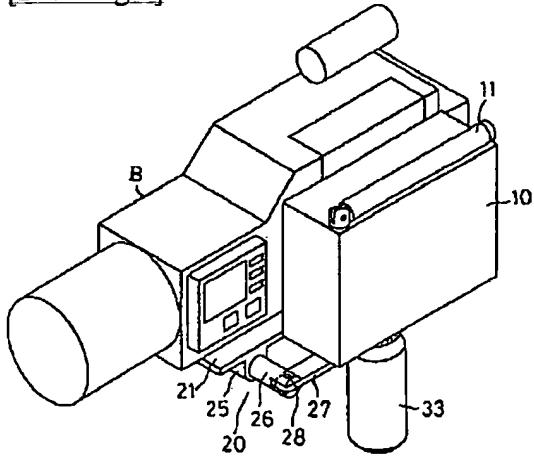
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

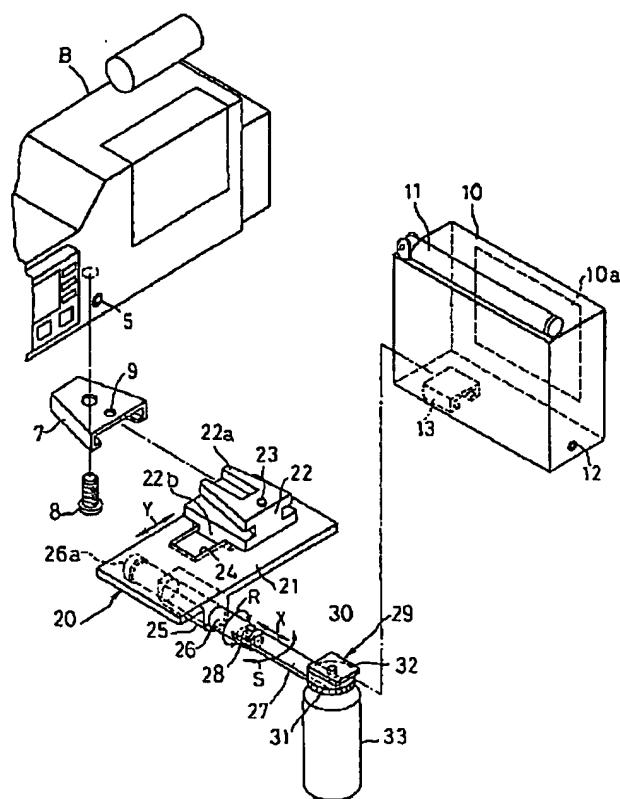
[Drawing 1]



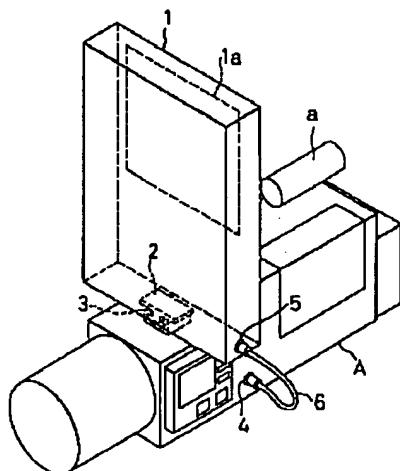
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]